

**Appl. No. 09/866,922**  
**Amdt. dated April 9, 2004**  
**Reply to Office Action of December 10, 2003**

**REMARKS/ARGUMENT**

This amendment responds to the Office Action of March 9, 2004.

Claims are pending in the application with claims having been canceled, claims having been amended, and new claim added.

Claim 1 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as his invention. Specifically, according to the Examiner, "In claim 1 'the remaining solids' lacks clear antecedent basis."

Claim 1 has now been amended by changing the language "the remaining solids" to "any remaining solids". It is submitted that this amendment satisfies any need for further antecedent basis and it is therefore requested that the rejection of claim 1 under 35 U.S.C. 112, second paragraph, be withdrawn.

Claims 1-3 and 5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Pescher et al. (U.S. Patent No. 5,914,040) in view of Rohrer (U.S. Patent No. 3,645,893) and Waldmann (U.S. Patent No. 6,261,459).

The feature of claim 2 has been incorporated into claim 1 and, thus, claim 2 has been canceled. Claim 3, which was dependent upon claim 2 has also been canceled.

Pescher et al. disclose a process for the purification of a medium containing organic waste. The process is characterized in that the starting medium (or effluent) containing the organic waste is subjected to the following stages: (i) treatment with at least one oxidizing agent; (ii) treatment

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with at least one flocculating agent; (iii) treatment with at least one polyelectrolyte, and in that the effluent obtained on conclusion of all of these stages is subjected to a filtration stage (iv), whereby a filtration cake and a filtrate are obtained. The process is said to be particularly useful for the treatment of pig manure.

Rohrer discloses adding to animal waste products, at the earliest possible moment, precipitants and/or coagulants, by which at least part of the dispersed substances and the colloidal and truly dissolved constituents is precipitated or flocculated, the liquid and solid constituents being afterwards separated by sedimentation, filtration, flotation and/or centrifugation.

Waldmann discloses an improved process for the treatment of water, selected from livestock wastewater and a livestock water stream, which process comprises adding to said water a composition comprising a sufficient amount of an acid to lower the water pH to less than 3.5 to 2.0; and wherein said acid is selected from the group of 1,3,5-triazine-2,4,6-(1H,3H,5H)-hydroxyalkyltriglyoxilic acid; 2,2-oxy-diacetic acid; 2,2-ether diglycolic acid; sulfamic acid; and sulfuric acid.

The currently claimed process for treating manure is unique in providing many advantages without generating harmful by-products. Nonetheless, claim 1 has been amended to replace the term "comprising" with "consisting of", thus excluding any additional steps.

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The Examiner has indicated that treatment with an oxidizing agent, as required by Pescher et al. is not excluded from the instant claims. Accordingly, as indicated above, the term "comprising" has been replaced by "consisting of", thus excluding any additional steps, such as treatment with an oxidizing agent.

The Examiner has stated that the claims of the present patent application differ from Pescher et al. by reciting steps for introducing homogenized liquid manure into a tank, and eliminating liquid from a solid phase by flotation. Actually, claim 1, as amended, recites the step of "eliminating any remaining solids in suspension from the liquid by flotation and coalescence of colloidal particles" and not "eliminating liquid from a solid phase by flotation." As acknowledged by the Examiner, this step is not disclosed or suggested by Pescher et al. The Examiner has thus cited Waldmann to show that it is known in the art to utilize air flotation to aid in the separation of solids from livestock wastewater that has been flocculated with cationic polyacrylamides. The Examiner has failed to note, however, that prior to his flotation step, Waldmann has treated the wastewater, from which the sludge has already been separated, by adjusting the pH with an alkaline material, adding a cationic polyamine, and *then* adjusting, *if needed*, the floc size by adding 0.1% of a cationic, anionic, , or nonionic polymer; or a polyacrylamide copolymer; or a polydiallyldimethylammonium chloride. The steps of adjusting the pH with an alkaline material and adding a cationic polyamine just prior to the flotation step are outside the scope of the present claims by virtue of the "consisting of" language referred to above.

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Applicant once again reiterates that the homogenization step of the present invention is very important. It is respectfully submitted that according to Pescher et al. the agents are added to the manure, and *subsequently stirred*. That is, the homogenization is performed simultaneously with respect to the step of stirring the agents into the manure. The same corresponds to the mixing disclosed in Rohrer. In the process of the present patent application, however, the *homogenization* is carried out *prior to the addition of the polyacrylamide*. This specific homogenization step is not disclosed or suggested in the cited art and has the important advantages permitting the reduction of the quantity of polyacrylamide that is needed and the optimization of the interaction between the manure and the polyacrylamide.

Thus, the process of the present invention, owing to its initial homogenization step and the subsequent specific sequence of steps permit the amount of polyacrylamide to be optimized and maximally reduced, whereby no excess polyacrylamide remains in the liquid or in the solids. As pointed out in the response to the previous Office Action, this has been experimentally checked and it has been found that the content of polyacrylamide in the liquid can be considered non-existent, in any case below the critical level of 1 ppm. The measures have been performed by several recognized "Standard Methods." Further, it has been determined that the obtained liquid is not viscous. Actually, studies have been performed some time after the filing of the present patent application regarding the optimization of the quantity of polyacrylamide in the treatment of liquid manure: see "Solid-Liquid Separation of Flushed Swine Manure with Pam: Effect of Wastewater Strength," 2002 American Society of Agricultural Engineers ISSN 0001-2351, page

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1965, figure 3, and the report published on the web site [http://www.cals.ncsu.edu/waste\\_mgt](http://www.cals.ncsu.edu/waste_mgt), wherein the advantages of the process according to the present patent application are further explained, both of which were provided to the Examiner with the filing of the response to the previous Office Action.

Accordingly, it is requested that the rejection of claims 1-3 and 5 under 35 U.S.C. 103(a) as being unpatentable over Pescher et al. in view of Rohrer and Waldmann be withdrawn.

In view of the foregoing, it is submitted that this application is now in condition for allowance and an early Office Action to that end is earnestly solicited.

Respectfully submitted,



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